

# Inspection Integration (i<sup>2</sup>)

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# Definitions

- Inspection – A checking or testing of an individual (real property asset) against established standards
- Assessment – To determine the importance, size, or value (of a real property asset)
- Integration – To form, coordinate, or blend into a functioning or unified whole



# Objective

To identify and address a facility's **overall** physical condition (architectural, structural, mechanical, plumbing, and electrical, **including sustainability and cool roof data**), where it is at in its life span, if any deficiencies exist, and whether or not it complies with current U.S. Department of Energy (DOE) codes, standards, and guidance



# Tools

## ■ Inspector/assessor

- CAS
- HPSB
- Cool roof

## ■ Guidance

- CAS
- HPSB
- Cool roof

## ■ Asset types assessed

- CAS
- HPSB
- Cool roof

## ■ Integration plan

## ■ iPad (or laptop or paper and pencil)



# Inspector (Assessors)

## ■ CAS

- A licensed professional engineer (architectural, mechanical, electrical) or technicians with facility and infrastructure inspection experience
- Familiar with procedures, terminology, and code compliance directives; procedures relative to condition assessments; or both
- An understanding of project management

## ■ HPSB

- A licensed professional engineer or architect
- A USGBC LEED® Accredited Professional (AP) or access to LEED® AP within DOE
- A construction, facilities, infrastructure, or maintenance manager
- A procurement specialist knowledgeable in construction and building procurement
- A FIMS/CAS specialist
- A third-party contractor experienced in sustainable green building practices and energy performance
- An Energy Service Company or other third party contractor familiar with the site facilities



# Inspector (Assessors) (continued)

## ■ Cool roof

- Basic knowledge of facility and infrastructure inspections
- Familiar with procedures, terminology, and code compliance directives; procedures relative to building inspections and cool roof assessments; or both
- Knowledge of DOE Office of Energy Efficiency & Renewable Energy's *Building Technologies Program—Guidelines for Selecting Cool Roofs* booklet
- An understanding of the EMS and the basic operations and maintenance of a building
- An understanding of project management



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# Assets

## **Buildings (DOE owned, DOE leased, contractor leased)**

- A building is a roofed, permanent structure suitable for housing people, materials, or equipment

## **Other Structures And Facilities (OSFs)**

- OSFs include any fixed real property improvements to land that are not classified as a building, e.g., bridges, towers, roads, and fences. It also includes site utility systems used to generate or distribute any services such as heat, electricity, sewage, gas, and water.

## **Trailers/Modulars/Containers**

- A trailer is considered real property if it is affixed to the ground or if it has a permanent utility connected (i.e., if an electrician is needed to make the electrical connection, it is a permanent utility; if an individual can plug it in like a boat or RV it is not a permanent utility)
- Modular units should be categorized as Property Type “B,” for building
- Containers generally should be classified as personal property and not be entered into FIMS unless they meet the criteria above for trailers



# Historical Information

- When was the asset last assessed?
- When was the asset acquired?
- Any recent construction or modifications?





# Guidance (CAS)

- DOE Order 430.1B, *Real Property Asset Management*
- ASTM Designation: E2018-08, *Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process*



# Implementation

- Refer to 2009 presentation
  - What Should Be Included in a Condition Assessment?  
from: <http://caisinfo.doe.gov/UserConf.htm>
- Refer to documents for the October 27 through 29, 2009, Las Vegas, Nevada, meeting
- Additional presentations



# Guidance (HPSB/Cool Roof)

- DOE Order 436.1, *Departmental Sustainability*
- Memorandum signed by the Secretary of Energy, Steven Chu, on June 1, 2010 – *Installation of Cool Roofs on Department of Energy Buildings*
- DOE *Guidelines for Selecting Cool Roofs*, July 2010, V. 1.2

## Supporting guidance

- Executive Order 13423, *Strengthening Federal Environmental, Energy, And Transportation Management*
- Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*



# Implementation (Cool Roof)

- Begin by determining the most appropriate roof systems or repair and maintenance methods for your building
- For existing roofs, the three main options are to coat the roof, recover the roof with a new waterproofing surface, or tear off the existing roof and replace it with a new roof
- If your roof is in poor condition or near the end of its life, it is usually best to recover, **replace**, or retrofit the roof. In some cases it is possible to build a second roof on top of an existing old roof, but this depends on building codes and the structural integrity of your roof.

# Implementation (HPSB)

- DOE Order 436.1, *Departmental Sustainability HPSB*
  - Step 1: Assemble a Project Team
  - Step 2: Initial Assessment/Planning and Identifying Building Sites
  - **Step 3: Formal Assessment, Compliance, and Documentation**
  - Step 4: Periodic Reassessment



# Implementation

## ■ Step 3: Formal Assessment, Compliance, and Documentation

- The formal assessment is a more detailed evaluation of each building identified in the initial assessment
- It may involve a visual inspection of the building, document reviews, and measurements to determine performance levels
- The formal assessment can be accomplished by using the Summary Checklist, the compliance forms (integrated design, commissioning, energy efficiency, etc.), or both. For each building, the project team may use the Summary Checklist or the compliance forms to evaluate and document each guiding principle already in place and to consider the feasibility of implementing the ones that are not.
- For each building where guiding principles are not met, the project team may develop a schedule for implementing the necessary upgrades



# Inspection Integration Ideas (i<sup>3</sup>)

## ■ What is LM doing?

- Aligning annual site inspections with CAS updates, HPSB updates (including EISA), and cool roof updates
  - Initial assessments for CAS, HPSB, and cool roof updated, signed, and included as appendices to updated CAS report

## ■ Benefits

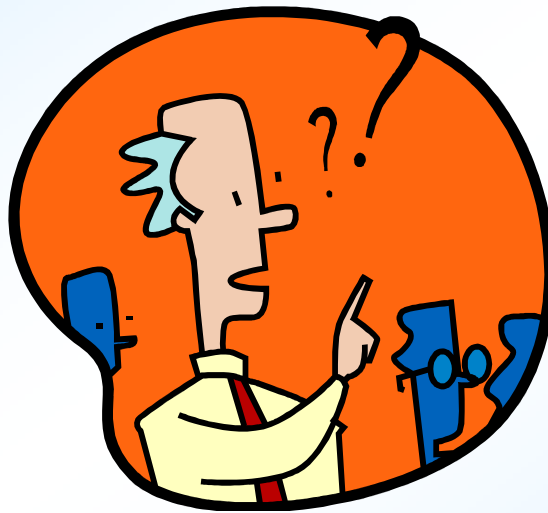
- Cost efficiencies
- Time efficiencies
- Networked communication



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# Questions or Comments?



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